

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-24 (Cancelled).

Claim 25 (Previously presented): A process for producing a metal particle nucleic acid composite comprising metal particles, the process comprising:

providing a nucleic acid specific metal complex;

reacting said nucleic acid specific metal complex with a nucleic acid to produce a metal complex-nucleic acid conjugate;

removing any non-conjugated metal complexes and/or non-conjugated by-products;
and

reacting the metal complex-nucleic acid conjugate with a reducing agent to produce the metal particle nucleic acid composite,

wherein the metal complex-nucleic acid conjugate is formed by the specific reacting of the nucleic acid specific metal complex with bases of the nucleic acid,

wherein the metal particle nucleic acid composite is catalytically active towards electroless metallization,

wherein the metal particles in the metal nucleic acid composite cannot be visualized by atomic force microscopy, and

wherein the metal particles in the metal particle nucleic acid composite are subnanometer in size.

Claim 26 (Previously Presented): The process according to claim 25, wherein the nucleic acid is reacted while dissolved in solution, immobilized on a substrate or in a semisolid state with said nucleic acid specific complex.

Claim 27 (Previously Presented): The process according to claim 25, wherein the nucleic acid is selected from the group consisting of DNA, RNA, PNA, CNA, oligonucleotides, oligonucleotides of DNA, oligonucleotides of RNA, primers, A-DNA, B-DNA, Z-DNA, polynucleotides of DNA, polynucleotides of RNA, triplexes of nucleic acids quadruples of nucleic acids and combinations thereof.

Claim 28 (Previously Presented): The process according to claim 25, wherein the nucleic acid is double-stranded or single-stranded.

Claim 29 (Previously Presented): The process according to claim 25, wherein the nucleic acid specific metal complex is selected from the group consisting of dichloro (2,2':6',2''-terpyridine)platinum (II) and cis-diaminodichloroplatinium (II).

Claim 30 (Previously Presented): The process according to claim 25, wherein the metal complex-nucleic acid conjugate is removed from a non-conjugated metal complex and/or the non-conjugated by-products by chromatography, precipitation or rinsing.

Claim 31 (Currently amended): The process according to claim 25, wherein the metal complex-nucleic acid conjugate is reacted with at least one reducing agent selected from the group consisting of a boron hydride, a borohydride salt, a Lewis base: borane complex of formula $L:BH_3$, wherein L is an amine, an ether, a phosphine, a sulfide, a hydrazine, a hydroxylamine, a hypophosphite salt, formate salt, a dithionite salt, [[or]] and H_2 .

Claim 32 (Previously Presented): The process according to claim 31, wherein the reducing agent is a gaseous reducing agent.

Claim 33 (Previously presented): The process according to claim 25, wherein the metal particles of the composite comprises at least one metal selected from the group consisting of Fe, Co, Ni, Cu, Ru, Rh, Pd, Ag, Os, Ir, Pt, Au and combinations of these metals.

Claim 34 (Cancelled).

Claim 35 (Previously presented): The process according to claim 25, further comprising treating the metal particles within the metal particle nucleic acid composite with an electroless plating solution to enlarge the metal particles.

Claim 36 (Previously presented): The process according to claim 35, wherein the metal particles within the metal complex-nucleic acid conjugate are treated while dissolved in solution, immobilized on a substrate or in a semisolid state with an electroless plating solution.

Claim 37 (Previously presented): The process according to claim 35, wherein the metal particles within the metal particle nucleic acid composite are treated with an electroless plating solution comprising at least one of the metal selected from the group consisting of Fe, Co, Ni, Cu, Ru, Rh, Pd, Os, Ir Ag, Pt, Au and combinations thereof.

Claim 38 (Previously presented): The process according to claim 35, wherein the metal particles of the composite are treated with an electroless plating solution comprising at least one material selected from the group consisting of magnetic Fe, Co, Ni, a combination of these metals, and a combination of these metals with boron (B) or phosphorus (P).

Claim 39 (Previously presented): A metal particle nucleic acid composite produced by the method of claim 25.

Claim 40 (Currently amended): A process for the manufacture of a nanowire, comprising:

providing a metal particle nucleic acid composite comprising metal particles produced by a process comprising ~~reacting a nucleic acid specific metal complex with a nucleic acid to produce a metal complex-nucleic acid conjugate~~ chemically modifying at least one cytosine residue of a polynucleotide to attach an imidazole group as a metal ligand, and metalating the attached imidazole with a metal complex having a tridentate ligand and a leaving group to form a conjugated metal complex;

removing any non-conjugated metal complexes and/or non-conjugated by-products;

reacting the metal complex-nucleic acid conjugate with a reducing agent to produce a metal particle nucleic acid composite; and

growing the metal particles of the composite by electroless deposition of a metal selected from the group consisting of Fe, Co, Ni, Cu, Ru, Rh, Pd, Os, Ir, Ag, Pt, Au and alloys thereof to produce said nanowire,

~~wherein the metal complex-nucleic acid conjugate is formed by the specific reacting of the nucleic acid specific metal complex with bases of the nucleic acid, and~~

wherein the metal particles of the metal complex-nucleic acid conjugate are catalytically active towards electroless metallization, wherein the metal particles of the metal complex-nucleic acid conjugate cannot be visualized by atomic force microscopy, and

wherein the metal particles in the metal particle nucleic acid complex are subnanometer in size.

Claim 41 (Previously presented): A nanowire produced by the process of claim 40, wherein the nanowire comprises insulating spaces between the individual metal particles positioned along a nucleic acid strand of said nucleic acid of said metal particle nucleic acid composite.

Claim 42 (Currently amended): A small-scale network ~~[[of]]~~ or electronic circuit, comprising at least one nanowire according claim 41.

Claim 43 (Previously Presented): The process according to claim 26, wherein the nucleic acid is reacted in a semisolid state, and wherein the semisolid state is a gel.

Claim 44 (Canceled).

Claim 45 (Previously Presented): The process according to claim 30, wherein the metal complex-nucleic acid conjugate is removed from the non-conjugated metal complex and/or the non-conjugated by-products by gel filtration chromatography, ion exchange chromatography, ethanol precipitation, water rinsing or aqueous salt solution rinsing.

Claim 46 (Cancelled).

Claim 47 (Previously Presented): The process according to claim 40, wherein said growing is a controlled growing.

Claims 48-66 (Cancelled).

Claim 67 (New): The process according to claim 40, wherein the chemically modifying at least one cytosine residue of a polynucleotide to attach an imidazole group as a metal ligand comprises bromine activation of the C-5 position of cytosine and nucleophilic displacement with 1-(3-aminopropyl)imidazole.